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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,908	09/12/2003	Tonja Lynn Andreana	PC25095A	6368

28880 7590 09/26/2005

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EXAMINER	
BERNHARDT, EMILY B	

ART UNIT	PAPER NUMBER
1624	

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/660,908	ANDREANA ET AL.	
	Examiner	Art Unit	
	Emily Bernhardt	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) *14-30 and 32-48* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/1/03&10/12/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-13 and 31, drawn to compounds,simple compositions where Z=N, classified in class 544, subclasses 361,363; class 514 subclasses 253.03, 253.07.

II. Claims 1-7, 9-13, drawn to compounds, simple compositions where Z=CH, classified in class 546, subclasses 157-158; class 514 subclass 312.

III. Claims 14-21 and 32-39, drawn to multiple sues employing compounds of I, classified in class 514, subclass 253.03,etc.

IV. Claims 14-21, drawn to multiple uses employing compounds of II, classified in class 514, subclass 312.

V. Claims 22-30 and 40-48, drawn to multiple uses employing compounds of I and additional active ingredients, classified in class 514, subclasses various as determined by the exact nature of ingredients employed.

VI. Claims 22-30, drawn to multiple uses employing compounds of II and additional active ingredients, classified in class 514, subclasses various as determined by the exact nature of ingredients employed.

If one of Groups III or IV is elected applicants must pick a single use.

If V or VI is elected applicants must pick a single use and an ultimate species pair of active ingredients. If I-IV is elected an ultimate species is also needed .

The inventions are distinct, each from the other because of the following reasons: Compounds within groups I-II relate to compounds of considerable structural dissimilarity in view of the varying central core as well as ring systems permitted at either end of the azine core. Thus they are separately classified. Each can support a patent as the compounds of each group are capable of being utilized alone not in combination with other members listed in the Markush group and are not art-recognized equivalents.

Inventions I/II and III/IV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case a variety of uses are urged for the compounds of the invention which may separate issues from an examination of just the compound/composition claims.

Additionally, compounds employed in I-II may be old or obvious for a particular use when separately employed but may be patentable due to superior, or synergistic properties not present for the individual components in I-II. Within groups V-VI there is more than one invention as the claims embrace multiple combinations for a variety of uses which require independent searches and which are not art-recognized equivalents in the art.

During a telephone conversation with Ms. Harvey on 8/18/05 a provisional election was made with right of traverse to prosecute the invention of I, claims 1-13 and 31 and in particular species of eg.23. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-30 and 32-48 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability

including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claims 1-7, 9-13 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1.R^{11} in the proviso appearing at the top of p.142 makes no sense since the variable is not involved in any ring forming step. Was R^{10} intended?

2. "Preferably" in the R^{14} and R^2/R^3 definitions renders the scope unclear as to what is being claimed- subject before or after the term.

3. What is the nature of the resultant ring formed by the joining of one of R^2 or R^3 which can be present anywhere on the phenyl ring with W^1 appearing on the 2nd ring? Only peri-fusion seems chemically plausible but eg.88 and 90 which are the only examples of peri-fused rings are not covered by the claim language. Clarification is needed.

4. The plethora of intended uses present in the composition claims, namely 13 and 31, renders the intended "amount" ambiguous since it is not conceivable that the dosage regimens for uses as varied as depression vs neurodegenerative disorders vs. addictive disorders would all be the same and there is nothing in the specification pointing to a particular regimen for the many recited uses. It is suggested that the uses be deleted since only one use is needed to support such a claim for compliance with 35 USC 112 and 101. See last paragraph of MPEP 2164.01(c), May 2, 2004 edition.

An "are" is missing in the R^5-R^8 definition.

Claims 1-7 and 9-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one

skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

1. Starting material sources for the polycyclo rings covered by NR10 joining with one of R4 or R9 as well as R2/R3 joining with W1 and spiro fusion permitted at R5/R6 or R7/R8 are not seen but are required. Specification is silent as to the availability of necessary reactants needed to prepare such of if they are commercially available. Note In re Howarth 210 USPQ 689; Ex parte Moersch 104 USPQ 122 for the need to show starting material sources commensurate with the claims' scope. As discussed in the above 112 rejection, eg.88 and 90 are not covered by the claims' scope and egs. 81,85-the only other polycyclo ring systems made and indicated as tested support ortho fused carbocyclic rings permitted at W1/W2.

2.As there are no such polycyclic compounds that have been made there is no reasonable basis for assuming that the myriad of compounds embraced by the all the generic claims will all share the same physiological properties since they are so structurally dissimilar as to be chemically non-equivalent and there is no basis in the prior art for assuming the same. The same applies for the scope of substituents permitted at R14 as well as at R2 and R3 which includes heteroaryls which can be monocyclic, bicyclic and further substituted with more groups. Note In re Surrey

151 USPQ 724 regarding sufficiency of disclosure for a Markush group. Also see MPEP 2164.03 for enablement requirements in cases directed to structure-sensitive arts such as the pharmaceutical art.

Also note the criteria for enablement as set out in In re Wands cited in MPEP 2164.01(a),August 2000 edition, which includes factors such as:

1) Breadth of the claims- the claims cover compounds easily in the millions as pointed out above;

2) Level of unpredictability in the art- the invention is pharmaceutical in nature as it involves binding to serotonin (5HT2A) and dopamine (D2) receptors. It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved" and physiological activity is generally considered to be unpredictable. See In re Fisher 166 USPQ 18. On p.1 of the specification it is stated that the 14-position is structure-sensitive;

3) Direction or guidance- as stated above the compounds made are not representative of the instant scope but are closer to each other than to remaining scope being mainly substituted with alkyl groups on the quinolinone ring

4) State of the prior art- The compounds are piperazine derivatives with benzofused rings at one end and quinolinone connected via alkylene, etc. at the

other end as well as fused derivatives thereof with substitution permitted at various ring positions. While such compounds are known as evident from the art applied below, they are similar in structure to the compounds made herein and thus do not evidence the many structural permutations permitted in the instant scope are known for at least one use in the prior art;

5) Working examples- No actual test data has been presented but only a range reported for compounds actually made and thus no clear evaluation of which functional groups at various positions out of the many claimed might affect potency to a large or small degree.

In view of the above considerations, this rejection is being applied.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,6,9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Howard (EP'435). Howard describes many compounds within the instant scope for use in treating psychosis and anxiety. See tetrahydro quinolinone species on p.3 and in working examples.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5,7,8 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howard in view of Lowe (US'031). The teachings of Howard as discussed in the above 102 rejection are incorporated herein. Claim 5 requires that X be N which could result in indazole which is also taught by Howard. See definition of "B" therein on p.2. Species in claim 8 (and 31) differ essentially from those in Howard in having a double bond at the 3,4 position of the quinoline ring. Compare for example species on line 16 in Howard with the 9th species on p.145 of claim 8 and the same in claim 31. Note that Howard also teaches either a single or double bond at this position and otherwise teaches the same type of substituents on both quinolinone and benzoazoles as exemplified herein.

Lowe is applied to show that oxidized forms of benzoisothiazoles are also known for similar or identical compounds to that claimed in Howard and for the same uses. See column 1, lines 37-40. Thus it would have been obvious to one skilled in the art at the time the instant invention was made to modify the

compounds of Howard as required by the claims rejected herein and in so doing obtain additional compounds for use as antipsychotics in view of the equivalency teachings outlined above.

Both references were cited by applicants.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Bernhardt whose telephone number is 571-272-0664.

If attempts to reach the examiner by telephone are unsuccessful, the acting supervisor for AU 1624, James O. Wilson can be reached at 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

E Bernhardt
Emily Bernhardt
Primary Examiner
Art Unit 1624